

PORTSMOUTH DOCKYARD

FROM GERMS TO WARSHIPS

BY

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Before the recorded commencement of a Dockyard at Portsmouth and indeed for at least a couple of centuries after its first conception Portsmouth was defended on the northern side of Portsea Island by Glacis (outer fortification slopes) and Pesthouse Fields. These occupied some 84 acres at the eastern end of the Dockyard so that invaders or attackers had to surmount glacis and pass through the primitive germ warfare area of the Pesthouse Fields before reaching the town and its Dockyard.

Perhaps in this modern age we should reconstitute the ancient defences to repel attacks on the constitution and future service of Portsmouth Dockyard.

This article does not attempt to emulate other distinguished authors in publishing yet another history of Portsmouth Dockyard but to quote some interesting facts met by the author during his service in the Yard.

The first recorded construction of a Dockyard at Portsmouth was in 1206 by King John and consisted mainly of walling in the temporary arrangements for docking followed in those days. This involved dragging the ship up as far as possible on to a suitable mudbank in a creek and building a temporary wall to keep out the tidal waters. King John's wall was a permanent enclosure with a semi-permanent portion which was removed when a ship was docked or undocked. The Dockyard was almost certainly started as a result of the loss of Normandy by King John in 1204 and from this date until the present day the fortunes of Portsmouth Dockyard have risen and fallen in accordance with the political or world situation at the time.

Over the years major additions to the Yard have been made as follows:—

John 1206	Negligible	
Henry VIII 1540	Area increased to	8 acres
Commonwealth 1658	„ „ „	10 „
Charles II 1663 and 1667	„ „ „	38½ „
William III 1710	„ „ „	49 „
George I 1723	„ „ „	68 „
Georges 1723-1793	„ „ „	88 „
Victoria up to 1896	„ „ „	200 „

H.M. Dockyard, Portsmouth, now covers 285 acres and includes some 25 miles of rail and crane track.

The first enclosed dock (site of No. 1 dock) was originally constructed entirely of wood in 1495 for docking ships of the *Sovereign Class* (600 tons). It is interesting to note that this dock was fitted with a pumping engine — a bucket dredger type, but could only be 'dried' by manually handled buckets. Docking occupied 140 men for a day and a night costing £2 13s. 2d. Undocking was more expensive as the dock had to be broken up each time and this cost £12 8s. 2d.

Steam pumping was first introduced in 1798 (the block-mills were the original site) and some parts of the original pumps still exist.

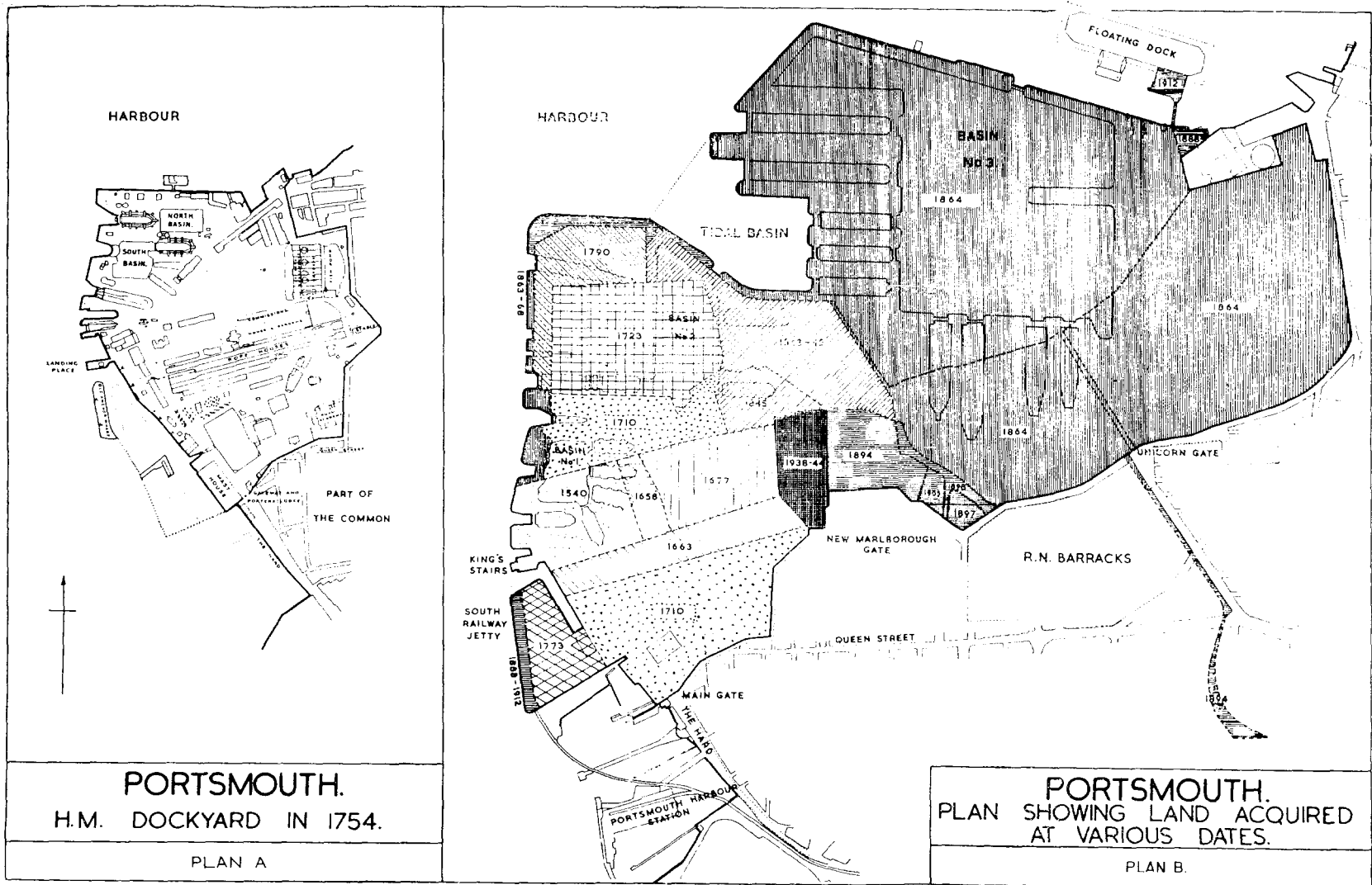
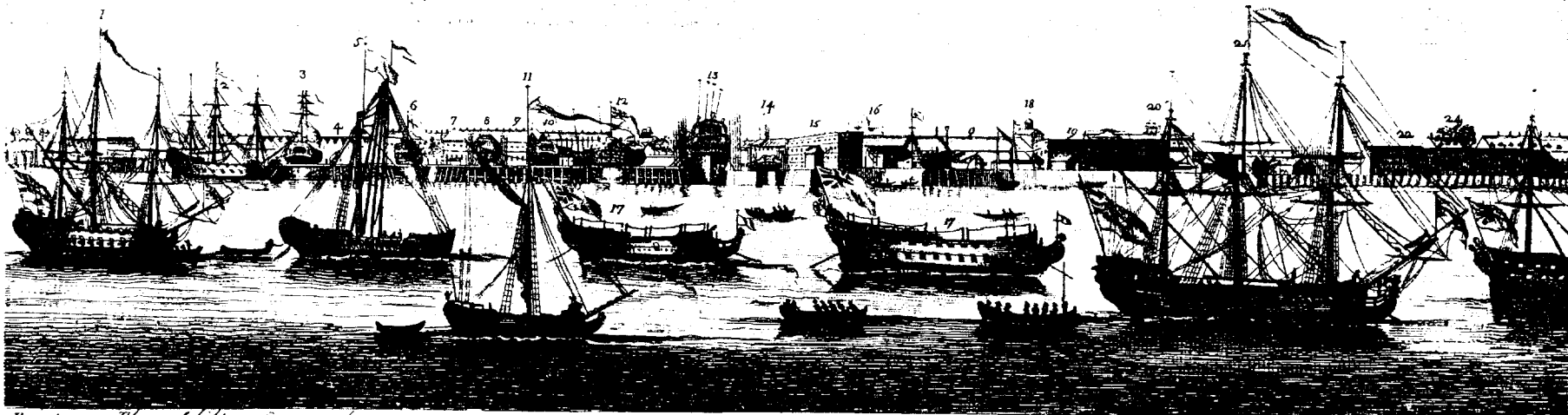


FIG. 1



Peint par Thomas Milton Sculp. et des.

Dessiné par Santucci

- 1 Le Capitaine général des Indes
- 2 L'ANSON le long de la rive
- 3 LE TITZE en Ombre
- 4 Bateau pour les Indes
- 5 Trois VOYAGE
- 6 Rôtisserie de Vaisseau Premier L'INDOIS
- 7 Maison des Officiers
- 8 Ambassadeur de France L'ANON de sa suite
- 9 Eglise
- 10 Calaque des Vaisseau de sa suite
- 11 Vaisseau des Commissaires
- 12 Vaisseau d'Inde de 90 canons à la force

LE PORT DE



PORTSMOUTH

Vu du côté

de l'Est

*Reduit de la Collection des Ports d'Angleterre dessinés par Milton et gravés
par Santucci l'année 1788*

- 13 Fabrique du Vaisseau NETTUNE de sa suite
- 14 La Maison de l'Orloge
- 15 Magasin des Voiles et des Mantes
- 16 Maison des Commissaires
- 17 L'ESPRIMENT et la BERWICK en suite
- 18 Coupelle
- 19 Maison de Cordage
- 20 L'Académie Royale
- 21 Le TERRIBLE garde Vaisseau
- 22 Le Tril
- 23 Le Magasin des Mâts
- 24 Maison des Poissons

FIG. 2

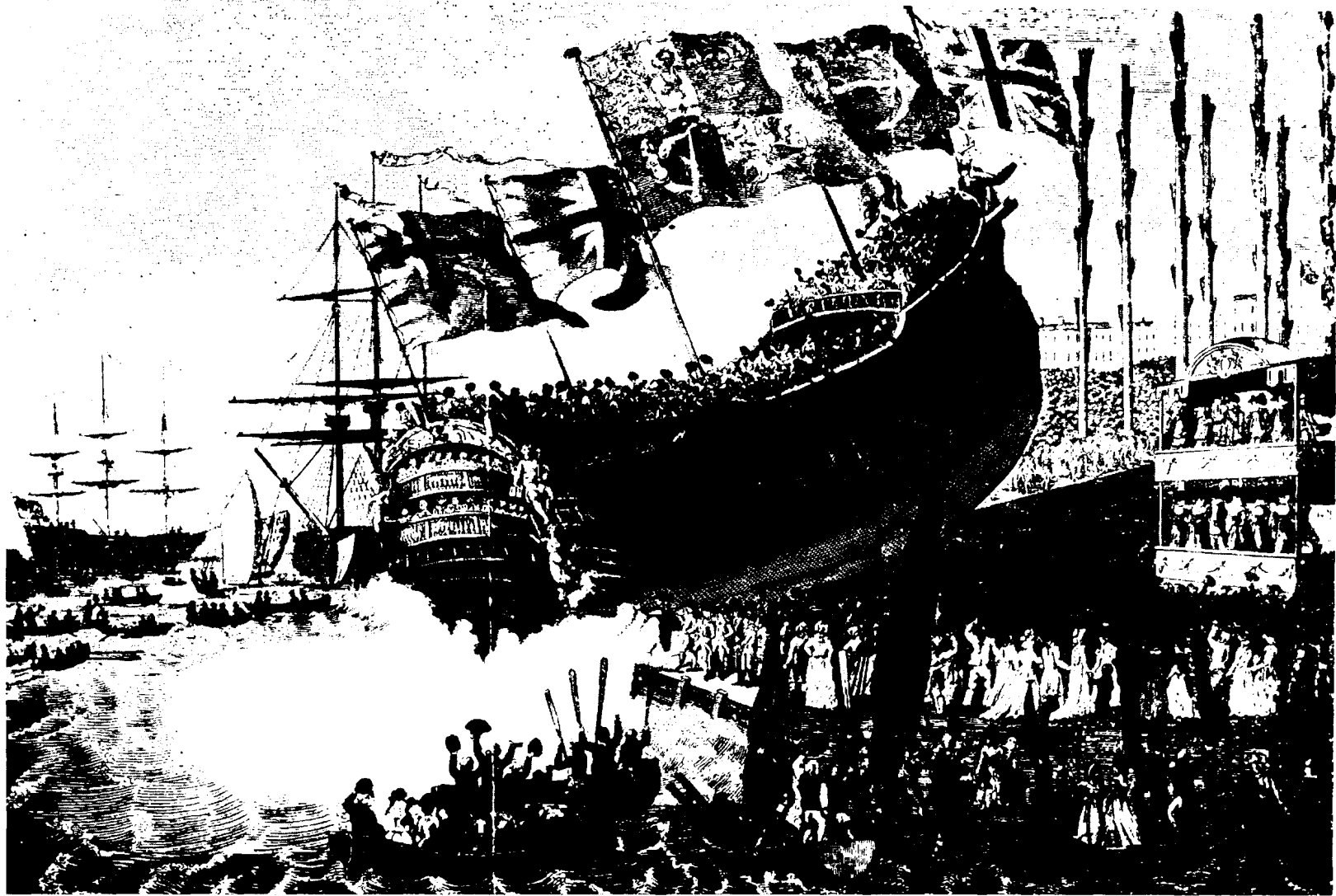


FIG. 3—LAUNCH OF H.M.S. *Prince of Wales* AT PORTSMOUTH, 1794

The present wall around the Yard was commenced in 1704 and was completed in 1711 by French prisoners of war; later French prisoners also constructed the reservoir used in dock pumping. With modifications to the pumping arrangements in the 1920's this reservoir sited under the block-mill area became disused and rapidly filled with silt. The ground support over the reservoir was by a large number of exactly similar pillar arches and the common joke was to escort a newcomer into the reservoir and then leave him to find his own way out — quite a frightening experience as the reservoir was also tidal.

The first steam propelled vessel, H.M.S. *Hermes* a paddle boat of 712 tons and 220 h.p., was launched in 1835.

The expenditure recorded in 1627 was £370, in 1950 £5 380 000, in 1969 approximately £20 000 000.

During 1800-1820 Portsmouth Dockyard had a very strong connection with Sir Marc Isambard Brunel as a contractor supplying newly invented machinery for manufacturing blocks and sheaves which was installed in the block-mills.

As the name block-mills implies, the manufacture of all types of ship's blocks, cleats, etc., was undertaken in this building. The building is now closed down and its fate has yet to be decided.

Although no authentic record exists of the date of erection of the block-mills, in 1803-1806 an arcade was constructed between two buildings to cover the installation of blockmaking machinery invented by Brunel. Prior to this date blockmaking was executed by hand in these two buildings but the majority of the naval requirements was met by a Southampton firm who held a monopoly through the control of Lignum Vitae. It was to break this monopoly that the Brunel machinery was installed and his equipment was the first ever example of batch manufacture, ten blocks being shaped simultaneously. Forty-five machines were originally installed most of which are now in museums but a boring machine, cornering saw, shaping machine, spiling machine, and scoring machine are still in working order in the Yard (at present sited in the Boat House). The boring machine is worthy of special mention still being able to bore large blocks from either end without an apparent join in the hole, despite the age of the machine.

The cost of Brunel's services and machinery was finally settled at £17,663 19s. Od., against the original estimate of £20 000. This cost was recovered in three years and these figures are more noteworthy when it is realized that from 1797-1801 Admiralty purchase of blocks was 100 000 per annum and the blockmakers contracts were worth about £34 000. Maximum production of 140 000/year was reached during the Crimean War in 1854 using Brunel machinery.

New construction has always been carried on in the Yard and at its peak there were five building slips; No. 3 and No. 4 were built over in the construction of No. 3 Ship Shop, No. 1 and 2 were small haul up slips and No. 5 was the main building and launching slip. 'Was' is the operative word for No. 5 slip as with new proposals in progress for the Dockyard, new construction will no longer be a part of the annual programme.

According to records (now considered inaccurate) 53 ships have been launched from this slip, the last being H.M.S. *Andromeda*, the first being H.M.S. *Royal Sovereign*, 3765 tons, the first of three ships of the same name to be launched from this slip. The largest launch was H.M.S. *Queen Elizabeth* in 1913, 10 647 tons (27 500 tons complete), length 643 ft 9 in. beam 90 ft. 7½ in. The most dramatic launch was that of H.M.S. *Dreadnought* (17 900 tons complete) in 1905. She occupied the slip for only 4¼ months and was completed in 1 year and 2 months to meet a national emergency obtaining at that time. Completed in this case was a reported word only, for it was known that a large number of

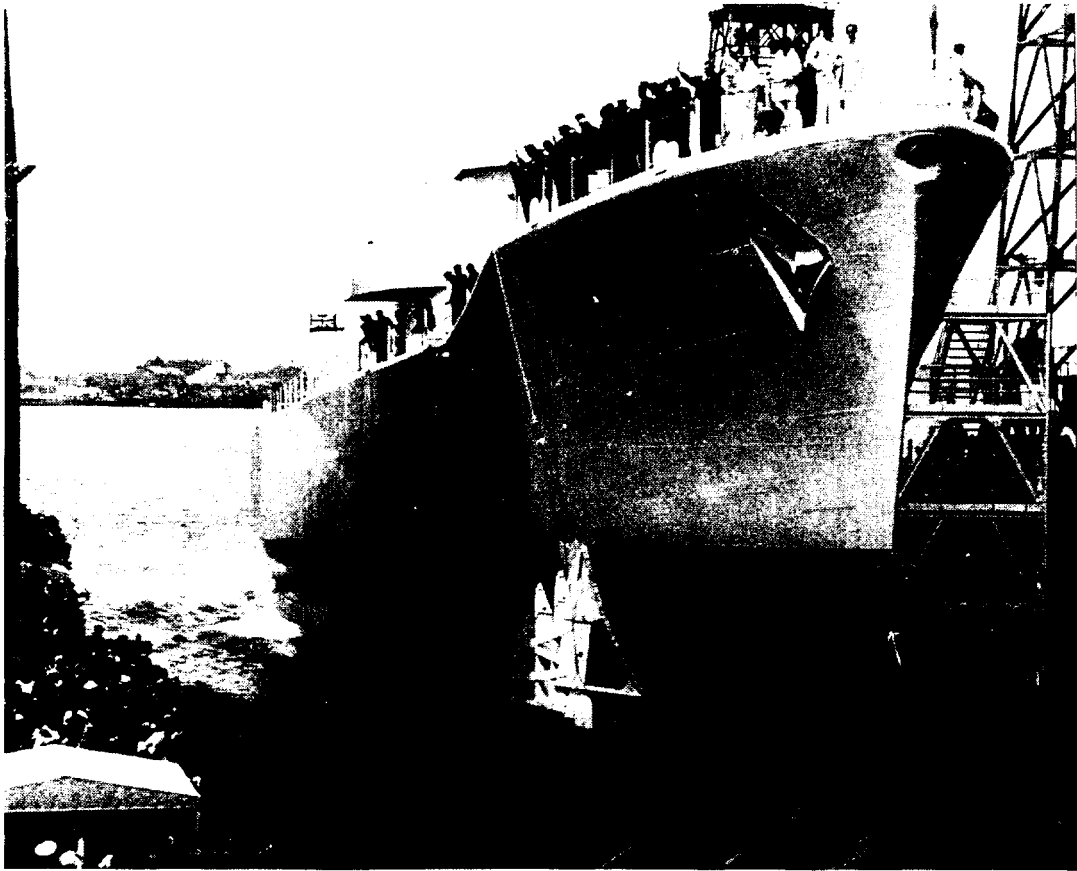


FIG. 4—H.M.S. *Andromeda*—THE LAST SHIP TO BE LAUNCHED AT PORTSMOUTH

dockyard workmen sailed on her for the next year to finish incompletd jobs. Could we say there has never been any change in this procedure?

The main pumping station was commenced in 1878 and completed the following year and currently supplies the following services:—

- Pumping out and continual drainage of docks.
- Compressed air for Yard Services at 100 lb/sq in.
- Salt water services to ships and for fire-fighting.
- Steam for general Yard Service.

The main machinery in this station has been modernized over the years, centrifugal pumps for reciprocating pumps, re-boiling, etc., but some of the original penstock gear for culvert valves and salt water pumps have only had their drives changed to electrical and are still operating. An interesting fact in connection with the original 60 lb/sq in. air supply, was that until just after World War II a very tall flag pole estimated at 100 ft, and quoted as the tallest one-piece wooden staff in the world, stood at the corner of the building visible over the whole Yard. The purpose was to indicate by visual signal to ships and services that air pressure was falling dangerously low and that use of air was to cease until the compressors caught up with the demand.

The Factory was constructed in 1905 covering some 174 000 sq ft and was the largest building of its kind in any Royal Dockyard, and in the 1950's was quoted as the largest covered machine shop in the South of England.

In the 1950's more than 20 000 people were employed in the Dockyard. This number has for various reasons dwindled to under 10 000 in this year. The weekly wage system was first introduced into the Dockyard in 1813; previously, daily payments were made. It is interesting to note that piecework

(payments by results) was introduced much earlier in 1775 and this immediately led to a strike among the shipwrights.

H.M.S. *Victory*, flagship of the Commander-in-Chief, is permanently docked at Portsmouth. During the early 1900's up to 1923 she was anchored afloat in the harbour, and when rotting timbers raised the question of a permanent dock some rather acrimonious discussion took place on her final resting place — Portsmouth or Chatham. Chatham's claim was based on the fact that H.M.S. *Victory* was built there. Portsmouth, shall we say, won the day, but perhaps it is fitting to end these notes with an observation that the stern of *Victory* is now under attack from beetles necessitating removal and restoration which requires new detailed drawings of 170 years old structures, a phenomenal task using ordinary methods, but a task being solved and made simple by the latest process of photogrammetry.

So from the germs of the Pest Fields to the germs eating H.M.S. *Victory* Portsmouth Dockyard progresses and these notes are finished by slightly misquoting the finishing words of a somewhat similar article by Vice-Admiral L. V. Morgan, C.B., C.B.E., M.V.O., D.S.C. (former Admiral Superintendent, H.M. Dockyard, Portsmouth): 'A Royal Dockyard cannot be improvised any more than a garden. Both need unstinted time and care and both can be ruined by a few years of neglect.'

Acknowledgments:

Vice-Admiral L. V. Morgan's article for the Institute of Naval Architects, 1947.

Notes on the Brunels — Mr. R. S. Horne, L.R.I.B.A.
Various Dockyard Records.
